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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,026	09/23/2003	Chandrasekharan Kothandaraman	2001 P 13804 US01	1828
25962	7590	04/12/2005	EXAMINER	
SLATER & MATSIL, L.L.P. 17950 PRESTON RD, SUITE 1000 DALLAS, TX 75252-5793			HUYNH, YENNHU B	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,026

Applicant(s)

KOTHANDARAMAN,
CHANDRASEKHARAN

Examiner

Yennhu B. Huynh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,5,6 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5,6,19,20 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 21&22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/13/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1,3,4 & 7-18 are cancelled by the Preliminary Amendment filed on 11/13/03.

Currently, claims 2,5,6 & 19-25 are pending.

Information Disclosure Statement

The information disclosure statement filed on 11/13/03 is being considered by the examiner.

Oath/Declaration

Oath/Declaration filed on 9/23/03 is accepted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,5,6,19,20 & 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sur, Jr. et al. (US 5,882,998) in view of Suzuki et al. (US 6,399,472B1)

Sur, Jr. et al. disclose :

-Re. claim 19: providing a multiplicity of programmable fuse devices having a first resistance (col.1 lines 52-56), each of the multiplicity including a section comprising

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a combination of a polysilicon layer 14 covered by a silicide layer 30; programming the programmable fuse device from the first resistant to the second resistance into the silicide layer (fig. 6, col.7 lines 23-35 and col. 7 & 8 lines 66-17); programming the programmable fuse device is without rupturing the combination is showing at figs. 6 & 7. The figures show that the polysilicon layer 14 and silicide layer 30 are still contacted together after programming and without any destructive of the device.

However, Sur, Jr. et al. do not disclose a barrier layer and an optical beam through the barrier onto the silicide layer.

Suzuki et al. disclose a barrier layer 88 formed on silicide 90 and polysilicon layer 84 (fig. 4A-4C); and a laser beam (or optical beam) through the barrier layer 88 and silicide layer 90 and blown the fuse pattern 85 (fig. 4c col.4 lines 54-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki et al. 's using laser beam to blow out the fuse, into the structure of Sur, Jr. et al., to obtain an intensity energy in blowing the fuse.

-Re. claim 2: Sur, Jr. et al. also do not disclose a barrier layer is made of SiN.

Suzuki et al. also disclose wherein the barrier layer (or passivation layer) is made of SiN (col.9 lines 8-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suzuki et al. 's using a SiN barrier layer, into the structure of Sur, Jr. et al., to prevent damages to underlaying from etching processing and transmission of the beam energy in blowing the fuse

-Re. claims 5 & 6: Sur, Jr. et al. also disclose wherein the silicide layer is selected from the group consisting of Co, Ti, Ta and Pt silicide (col.6 & 7 lines 63-3).

-Re. claim 20: Sur, Jr. et al. also disclose wherein increasing the resistance of the programmable fuse device comprises the step of removing a portion of the silicide layer 30 to (fig. 5A col. 6 lines 48-53).

-Re. claim 23: Sur, Jr. et al. also disclose wherein the programming of fuse devices by passing a current through the combination polysilicon layer and silicide layer (col.8 lines 33-48).

-Re claim 25: Sur, Jr. et al. also disclose wherein the current is generated by connecting a voltage between of 1.2 – 3.5 volts across the combination (col.8 lines 34-48).

-Re. claim 24: Sur, Jr. and of Suzuki et al. disclose substantially all of the claimed features, but do not disclose wherein the current is of about of 10mA for about 200 microseconds.

The current and time range is considered to involve routine optimization while has been held to be within the level of ordinary skill in the art, As noted In re Aller 105 USPQ233, 255 (CCPA 1955). the selection of reaction parameters such as temperature and concentration would have been obvious.

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Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result, which is different in kind, and not merely in degree from the results of the prior art. In re Dreyfus, 22 CCPA (Patents) 830, 73 F.2d 931, 24 USPQ 52; In re Waite et al., 35 CCPA (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. In re Swenson et al., 30 CCPA (Patents) 809, 132 F.2d 1020, 56 USPQ 372; In re Scherl, 1193, 156 F.2d, 70 USPQ 204. However, even through applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPS (Patents) 1313, 77 F.2d 627, 25 USQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 708, 66 USPQ 308; In re Irmischer, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al. 33 CCPA (Patents) 1250, 156 F. 2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 R.2d 986, 38 USPQ 214; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

Allowable Subject Matter

Claims 21 & 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: Prior art do not discloses a programmable fuse, which includes transmitting an optical beam is in the visual range and is in the (NIR) near infrared.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yennhu B Huynh whose telephone number is 571-272-1692. The examiner can normally be reached on 8.30AM-7.00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on 571-272-1702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-7724.

YNBH,
120904


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
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